LAPKIN, I.I.; POVARNITSINA, T.N.

Organosilicon compounds. Part 1: Compounds containing alkoxyphenyl radicals. Zhur.ob.khim. 32 no.4:1314-1318 Ap '62. (MIRA 15:4)

1. Permskiy gosudarstvennyy universitet.
(Silicon organic compounds)

S/079/62/032/004/006/010
D204/D301

15.8170

AUTHORS: Lapkin, I.I., and Povarnitsina, T.N.

TITLE: Studies of organosilicon compounds. III. Compounds containing alkoxyphenyl radicals

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 4, 1962, 1314-1318

TEXT: Interactions of o-alkoxyphenyl magnesium bromides with $SiCl_4$ were studied, as organosilicon compounds containing alkoxyphenyl groups are virtually unknown. The reactions took place in ether, over 3 hours, with heating. With molar ratios, (n), of the Grignard to $SiCl_4$ equal to 3 : 1 or 5 : 1 the first product was a di-(o-alkoxyphenyl)-dichlorosilane which, on further heating, reacted with the 3rd mole of the Grignard to give a di-(o-alkoxyphenyl)-phenoxy-chlorosilane. The alkyl group in the above compounds was Et, n-Pr, iso-Pr, n-Bu and iso-Bu. o-Anisyl magnesium bromide reacted anomalously, giving at n = 3 : 1, 4 : 1, 5:1 85 % yields of o-anisyl-diphenoxy-chlorosilane. Hydrolysis of these products was also carried out to give the corresponding di-(o-alkoxyphenyl)-phenoxy-hydroxy-

Card 1/2

POVARNITSYN, M. S.

"The Investigation of a temperature Field in a Three-layer Plate with a Honeycomb Filler at Asymmetric Heating."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

POVARNITSYN, M.S.; STYTSYUK, V.I.

Designing infrared heaters with plane reflectors. Inzh.-fiz. zhur. 4 no.4:109-112 Ap '61. (MIRA 14:5)
(Infrared rays--Industrial applications)

L 14466-66 EWT(1)/EWP(m)/EPF(n)-2/EWA(d)/FCS(k)/ETC(m)-6/EWA(1)

ACC NR: AP6003590 SOURCE CODE: UR/0170/66/010/001/0120/0126

AUTHOR: Povarnitsyn, M. S.; Yurlova, Ye. V.

ORG: none

TITLE: Calculation of the temperature field in a plane channel with non-uniform heating of the heat-conducting walls

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 1, 1966, 120-126

TOPIC TAGS: ~~temperature control~~, ~~temperature characteristic, heat effect~~, laminar flow, thermal stability, ~~heat flow pickup~~, ~~temperature field~~, heat conduction, heat source, gas flow, temperature measurement, temperature distribution

ABSTRACT: An analysis of the stationary temperature field in the walls of a semi-infinite plane channel in the case of hydrodynamically fully developed laminar flow is presented (formulas (26), (28) and (30)-(33). There are heat sources distributed according to the parabolic law in thermally thin walls of the channel (23). The heat flux along the walls of the channel is taken into consideration (9). The entrance gas flow temperature (32) is non-uniform (8). The entrance wall temperature (32) is found to be different from the temperature of the flow near the walls. Orig. art. has: 3 figures and 33 formulas. [Based on author's abstract].

SUB CODE: 20/ SUBM DATE: 24Dec64/ ORIG REF: 001/ OTH REF: 005/

Card 1/1

POVARNITSYN, M.S.; YURLOVA, Ye.V.

Calculating the temperature field in a plane channel with nonuniform heating of the heat-conducting walls. Inzh.-fiz. zhur. 10 no.1:120-126 Ja '66. (MIRA 19:2)

1. Submitted December 24, 1964.

RUVARMITSYN, M. S.

Dissertation defended for the degree of Candidate of Technical Sciences at the Joint Scientific Council on Physicomathematical and Technical Sciences; Siberian Branch

"Investigation of Temperature Fields and Thermal Conductivity of Three-Layer Sheets Containing Filler in the Form of Honeycomb or Corrugation with Radiation Considered."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

27555
S/170/61/004/010/009/019
B109/B138

26.2181

AUTHOR: Povarnitsyn, M. S.

TITLE: Investigation of the temperature field in a three-layer plate with a honeycomb core under asymmetrical heating

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 10, 1961, 64 - 70

TEXT: Multilayer metallic honeycomb structures are used as heat insulators. The thermal properties are described by very complex integro-differential equations. With the help of numerous simplifying assumptions the problem is reduced to the calculation of the temperature field, heat flow, and effective heat conductivity of a closed hollow cylinder. Its ends are heated or cooled aerodynamically, and the walls are heat-insulated. In a moment of time $t = 0$ the one end (bottom) of the cylinder (temperature T_o = const) is assumed to be in a diathermal medium having a temperature T_B and a heat-transfer coefficient α_1, and the other (top) in a radiation-absorbing medium with T_H and α_2 (Fig. 1). If the boundary conditions are considered the solutions to the basic thermal equations

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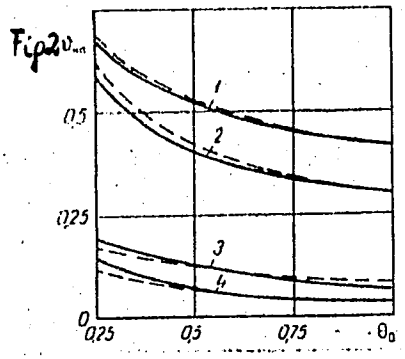
values of $\frac{\alpha_1 a^2}{\delta \varepsilon_1 c_1 k}$: 1 - 0.04; 2 - 0.1; for $\vartheta_{BP} = 0$: 3 - 0.04; 4 - 0.1.

The solid line presents $\varepsilon = 0.77$, and the dashed line $\varepsilon = 0$. There are 3 figures and 1 non-Soviet reference.



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L 17926-65 EWT(l)/EWP(m)/EWT(m)/EWA(d)/EWP(k)/FCS(k)/EWP(b)/EWA(l)/EWP(t) Pf-4/Pd-1
ASD(m)-3/ASD(f)-2/BSD/AEDC(a)/AFWL/AFETR JD/HW

ACCESSION NR: AP4048849 S/0170/64/000/011/0036/0041

AUTHOR: Povarnitsy*n, M. S. B

TITLE: Calculating the vaporization temperature and speed of the walls of a flat channel with internal heat sources under a developed laminar flow

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 11, 1964, 36-41

TOPIC TAGS: gas flow, hot gas container, laminar flow, kinetic theory, vapor plating

ABSTRACT: The temperature distribution in walls of a flat duct conducting developed laminar flow of a noncompressed fluid was investigated. A gas, with an initial temperature T_0, was made to flow in a long duct with width = 2h. The flow was stable, developed laminar, with parabolic velocity profile. Heat sources of constant potential were placed along the duct. The aim of the experiments was to determine the temperature distribution in the duct walls and the speed of their vaporization. Additional conditions were: 1) relative gas temperature change in the duct was not great, gas compressibility was ignored, heat constants were independent of temperature; 2) vaporization of channel walls was weak, the thermal effect accompanying vaporization was ignored along with effects of temperature and concentration upon velocity; 3) the work of pressure forces and heat due to gas friction

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L 17926-65
ACCESSION NR: AP4048849

were accounted for; 4) thin walls (heat-insulated from outside) were investigated, and heat flux in the walls along the longitudinal axis was ignored. Equations were developed describing the temperature distribution in the walls. A plot of the resulting distribution for three parametric values is shown in Fig. 1 on the Enclosure. This distribution was used to find the relationship

$$I = \frac{j}{\rho u_m} = -\frac{x\beta_1}{ReSc}\int_0^{\tau}\frac{\partial\theta}{\partial\tau'}\times$$

$$\times\frac{\exp\left[\gamma_1\beta_1(1+\theta_0^{-1}-\theta^{-1})\right]}{(1+\theta_0^{-1}-\theta)^2}\,\Phi\left[\frac{Pr}{Sc}(\tau-\tau')\right]d\tau',$$ where I is vaporization speed, x is the longitudinal flow distance from the inlet, $\tau = 2x/3h\ PrRe$, θ is the temperature variation from maximum relative to the maximum range of test temperatures, ϕ is the derived distribution function, and γ, and β are variables related to the wall composition. Orig. art. has: 30 equations and 1 figure.

ASSOCIATION: none

SUBMITTED: 150ct63 ENCL: 01

SUB CODE: ME NO REF SOV: 001 OTHER: 001

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L 17926-65
ACCESSION NR: AP4048849

ENCLOSURE: 01

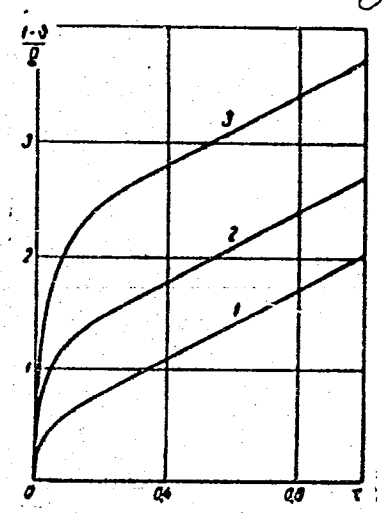

Fig. 1. Distribution along the duct walls according to the nondimensionalized variable $(1 - \theta)g^{-1}$ proportional to wall temperatures. 1 - $\xi/g = 0$; 2 - $\xi/g = 4$; 3 - $\xi/g = 10$.

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POVARNITSYN, Vladimir Alekseyevich [Povarnitsyn, V.O.]; KOTOV, M.I., doktor biolog.nauk, otv.red.; LYSENKO, F.V., red.izd-va; MATVIYCHUK, O.O., tekhn.red.

[Forests of the Ukrainian Polesye] Lisy ukrains'koho Polissia. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 206 p. (MIRA 13:3)
(Polesye--Forests and forestry)

POVARNITSYN, Vladimir Alekseyevich [Povarnitsyn, V.O.]; KOZOV, M.I., doktor biolog.nauk, otv.red.; LISENKO, F.V., red.izd-va; MATVIYCHUK, O.O., tekhn.red.

[Forests of the Ukrainian Polesye] Lisy ukrains'koho Polissia. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 206 p. (MIRA 13:2)
(Polesye--Forests and forestry)

GROZDOV, Boris Vladimirovich; POVARNITSYN, V.A., prof., retsenzent; STEL'MAKHOVICH, M.L., red.; FUKS, Ye.A., red.izd-va; PARAKHINA, M.L., tekhn.red.

[Dendrology] Dendrologiia. Izd.2., perer. Moskva, Goslesbumizdat, 1960. 354 p. (MIRA 14:4)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk (for Povarnitsyn).

(Trees)

LAPKIN, I.I.; POVARNITSINA, T.N.; ANVAROVA, O.Ya.

Organosilicon compounds. Part 4: Reaction of triethylsilane with α-chlorinated ethers and aldehydes. Zhur. ob. khim. 35 no.10:1835-1839 O '65. (MIRA 18:11)

1. Permskiy gosudarstvennyy universitet.

ACC NR: AP7012416 SOURCE CODE: UR/0079/66/036/011/1952/1954

AUTHOR: Lapkin, I. I.; Anvarova, G. Ya.; Povarnitsyna, T. N.

ORG: Perm State University (Permskiy gosudarstvennyy universitet)

TITLE: Organoberyllium compounds and their chemical transformations. I

SOURCE: Zhurnal obshchey khimii, v. 36, no. 11, 1966, 1952-1954

TOPIC TAGS: organoberyllium compound, halide, keto alcohol

SUB CODE: 07

ABSTRACT: A method was devised for synthesizing organoberyllium compounds of the type of beryllium acyl halides $\left(R\text{-}C\begin{matrix}=O\\ \diagdown BeX\end{matrix}\right)$, by reaction of beryllium with acid chlorides, bromides, and iodides. The compounds were not isolated in pure form, but their chemical reactions were studied. The reaction with water resulted in aldehydes, that with acid chlorides yielded alpha-diketones, and the reaction with ketones yielded alpha-ketoalcohols. Five alpha-diketones and two alpha-ketoalcohols were synthesized and characterized. Orig. art. has: 1 formula and 1 table. [JPRS: 40,422]

Card 1/1 UDC: 547.254.5

0932 1350

POVERENNYY, A.M.

Isolating bacterial nucleic acids by the use of procollagen. Ukr. biokhim.zhur. 31 no.4:596-602 '59. (MIRA 13:1)

1. Rostov Medical Institute, Department of Biochemistry.
(BACTERIA) (NUCLEIC ACIDS) (COLLAGEN)

KOSTYUKOVSKIY, M.G.; POVERENNYY, L.D.

Results of competition in constructing precast reinforced concrete roofs for industrial buildings. Stroi. prom. 34 no.8:22-28 Ag '56. (MLRA 9:10)

(Precast concrete construction) (Roofs)

POVERENNYY, M.

More about the practice of decentralized settlement of accounts. (MLRA 9:8)
Fin.SSSR 17 no.4:58-61 Ap '56.
(Clearinghouse)

POVERENNYY, V.

Improve the dissemination of technical information and progressive practices. Khim.prom. no.2:121-122 Mr '56. (MLRA 9:8)

1. Starshiy inzhener Tekhnicheskogo upravleniya Ministerstva khimicheskoy promyshlennosti.
(Chemical industries)

TOVARNI, I. I.

"Investigation of the Work of a Cap Disk." Thesis for degree of Cand. Technical Sci. Sub 18 May 50, Moscow Inst of Chemical Machine Building.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

SOV/96-59-4-14/21

AUTHORS: Povarnin, P.I., Candidate of Technical Sciences and Semenov, S.T., Engineer

TITLE: An Investigation of Critical Boiling of Water Below the Saturation Temperature During Rapid Motion in Pipes (Issledovaniye krizisa kipeniya vody, nedogretoy do temperatury nasyshcheniya pri dvizhenii yeye s bol'shoy skorost'yu v trubakh)

PERIODICAL: Teploenergetika, 1959, Nr 4, pp 72-79 (USSR)

ABSTRACT: The object of this work was to extend the range of investigation of critical boiling during forced motion of a liquid in tubes to higher speeds of 40 m/sec and more. To allow of comparison with previously published work a pressure of 35 atm was used and the degree of underheating ranged from 0 - 200°C. As the speed ranged from 3.6 to 45 m/sec it was necessary to develop procedures for obtaining thermal fluxes of 50.10^6 kcal/m^2hour. The experimental equipment is fully described and a schematic diagram of it is given in Fig.1. It was made of stainless steel. A sketch of the experimental section is given in Fig.2 and this also is described in great detail. The apparatus is based on the usual principle of

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An Investigation of Critical Boiling of Water Below the Saturation Temperature During Rapid Motion in Pipes

forcing water through an electrically heated tube. The formulae used in working out the results are given. The experimental procedure adopted is based on the assumption that the formation of a steam insulating film when critical boiling occurs is of a local character when the working fluid is more than 20 - 40°C below the saturation temperature. Accordingly this film does not extend along the length of the tube for more than one or two diameters and does not depend on the total length of the heated section. It, therefore, suffices to use a tube which is about ten diameters long. The tubes used in the tests ranged from 1.5 - 3.0 mm internal diameter and from 8 to 40 mm long; they were made of copper or stainless steel. Current was passed through the tubes until critical boiling occurred and the tube burned out, continuous recordings being made of current and temperature. In the early tests there was evidence of steam corrosion of the metal and accordingly for later work great care was taken to remove oxygen from the steam. The results of

An Investigation of Critical Boiling of Water Below the Saturation Temperature During Rapid Motion in Pipes

31 tests made during the course of the work are tabulated. The formulae used by a number of previous authors to work out their results are given and compared. These formulae were used to work up the test data of the present article and are plotted in Fig.4. Contradictions that arise from the use of the various formulae are pointed out and a somewhat modified version of one of the previous formulae, given as expression (12), was used to work out the results of the present work. It is then explained how this expression may be developed into expression (14) and the results obtained in the present work and by previous authors are then worked out in this way and plotted in Fig.5. The same points in other coordinates are given in Fig.6. It is stated that the equation proposed satisfactorily corresponds to the critical rate of heat transfer over the velocity range considered and affords the possibility of extrapolating to higher

SOV/96-59-4-14/21

An Investigation of Critical Boiling of Water Below the Saturation Temperature During Rapid Motion in Pipes

velocities. Throughout the work particular comparison is made with the results of Buchberg of Oak Ridge, Tennessee. There are 6 figures, 1 table and 13 references of which 6 are Soviet and 7 English.

ASSOCIATION: Energeticheskiy institut AN SSSR (Power Institute Ac.Sc.USSR).

Card 4/4

POVAROV, A. I.

Dressing fine-grained iron ore on an air-driven pulsating jigger. Obog. rud. 7 no.6:11-15 '62. (MIRA 16:4)

(Ore dressing—Equipment and supplies)

SOV/137-57-10-18563

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 15 (USSR)

AUTHOR: Povarov, A.I.

TITLE: An Engineering Evaluation of Classifier Function (K tekhnologicheskoy otsenke raboty klassifikatorov)

PERIODICAL: Obogashcheniye rud, 1956, Nr 5, pp 40-48

ABSTRACT: The classifier of the Kirovograd dressing mill is used to show the variation in classification efficiency (CE) in accordance with the size of the material used for the analysis. The most widely used method of calculating CE by size minus the maximum overflow grain size makes it possible to determine the recovery of this material, although the calculation is performed by means of the efficiency formula. The results of calculation of the increase in various classes in the overflow, and also of extraction thereof from the sands, are adduced. That grain size which shows no increase in the overflow may be regarded as constituting the cut size along which division occurs in the classifier. Grains smaller in size than the cut size are concentrated in the overflow, while the larger grains go into the sands. 3 methods of finding the cut size from the

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SOV/137-57-10-18583

An Engineering Evaluation of Classifier Function

Characteristics of the classifier rake-product size are examined. Recommendations are offered on the use of the various methods. Calculation of size characteristics may be based on the curve for recovery of particular narrow classes in the overflow or sand. An example of elaboration of the results of classification and of calculation of the size characteristics of the product is adduced. A comparison of the work of a hydrocyclone and of a rake classifier is made. The foregoing may also be applied to an evaluation of the quality of sink-float separation by means of so-called Tromp curves, which describe a change in the recovery of materials of various densities in the products of sink-float separation.

S.M.

Card 2/2

SOV/137-57-11-20780

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 20 (USSR)

AUTHORS: Povarov, A.I., Ivanova, L.Ye.

TITLE: Testing Hydrocyclones and Turbocyclones at the Balkhash Dressing Mill (Ispytaniye gidrotsiklonov i turbotsiklonov na Balkhashskoy obogatitel'noy fabrike)

PERIODICAL: Obogashcheniye rud, 1956, Nr 6, pp 34-35

ABSTRACT: Tests were run of simple conical three-product cyclones, cylindrical hydrocyclones (H), and turbocyclones with top, side, and bottom discharge of the dust. The tests were run with 2 types of feed: Feed from a control classifier providing 46-48% 74-micron undersize and 35-39% solids, and crude concentrate after grinding in the mill, with 65-75% 74-micron undersize and 35-39% solids. The tests show that turbocyclones do not yield any better classification results than H. The best indices both as to output and quality of classification are obtained with conical and three-product H. A table of mean indices for the functioning of the equipment is adduced. A. Sh.

Card 1/1

POVAROV, A.I., kandidat tekhnicheskikh nauk; CHIRKOVA, K.I., starshiy nauchnyy sotrudnik.

Removal of phosphorus from Krovoy Rog magnetic iron ores during beneficiation. Trudy Mekhanobr. no.95:24-41 '56. (MLRA 10:1)
(Krivoy Rog--Magnetite) (Magnetic separation of ores) (Phosphorus)

POVAROV, A. I.

27

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The removal of phosphorus from the magnetite ores of Krivoi Rog during enrichment. A. I. Povarov and R. I. Chirkova. *Trudy Nauch.-Issledovatel. Proekt. Inst. Mekh. Obrabotki Poleznykh Iskopaemykh, Sbornik* 1957, No. 95, 24–41.—The purpose of this work was to work out a technic scheme for obtaining Bessemer concentrates from the Krivoi Rog ores. P is found mainly in apatite which occurs in quartz as inclusions measuring 0.04–0.001 mm. in diam. This influences the P content of ores ground to certain grain sizes. In ores ground from 0.5 to 0.074 mm. (grain size) the P content is 0.044%, it decreases to 0.016–0.018% in ores with a grain size of 0.035–0.045 and increases abruptly when the ore is more finely ground. P content decreases also when the iron content of the concentrates increases. At 60% iron the concentrate contains 0.024% P. This corresponds to the requirements for production of Bessemer cast iron containg. 0.07% P. When the iron content is increased up to 61–62% the P content decreases to 0.022–0.020%, this concentrate produces cast iron with 0.06% P. To obtain concentrates of the necessary purity wet magnetic sepn. is used. A concn. sheet is given. A. V.

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SOV/137-58-10-20701

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 52 (USSR)

AUTHORS: Kachan, I.N., Kazennov, M.N., Povarov, A.I.

TITLE: Grinding and Leaching of Nepheline Clinker at the Volkhov Plant (Izmel'cheniye i vyshchelachivaniye nefelinovogo speka na Volkhovskom zavode)

PERIODICAL: [Tr.] Vses. n.-i. i proyektn. in-ta mekhan. obrabotki poleznykh iskopayemykh, 1957, Nr 102, pp 222-228

ABSTRACT: Descriptions are provided of the results of laboratory experiments at VAMI in the development of a rational method of extracting Al_2O_3 from alumina raw material and of technical assistance to the Volkhov Aluminum Plant in starting an alumina department with regard to setting up the process of grinding and leaching of nepheline clinker in hot caustics.

N.P.

1. Nephelite--Processing

Card 1/1

POVARGV, A.I.; ZABIROV, M.G.

Automatic regulation of hydrocyclones. Obog. rud. 3 no.3:33-40 '58. (MIRA 12:1)
(Separators (Machines)) (Automatic control)

POVAROV, A.I.; IVANOVA, L.Ye.

Comparing various makes of hydrocyclones. Obog.rud 3 no.5:22-31 '58. (MIRA 12:5)
(Separators (Machinery))

AUTHOR: Lokonov, M.F. SOV/136-58-10-23/27

TITLE: The Fourth Scientific-technical Session of the Mekhanobr Institute (Chetvertaya nauchno-tekhnicheskaya sessiya instituta Mekhanobr)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 10, pp 92 - 95 (USSR)

ABSTRACT: On July 15-18, 1958, the fourth scientific and technical session of the Mekhanobr Institute was held in Leningrad. It was attended by about 300 representatives from scientific and design institutes, industry and political bodies. The session began with surveys of the work of the Institute since the third session in 1954 by Professor O.S. Bogdanov, G.A. Finkel'shteyn and A.B. Patkovskiy. The session then heard and discussed the following: by Ye.L. Kritskiy (Mekhanobr) on the development of a sound-measurement method of regulating ball-mill operation; by A.I. Povarov and M.G. Zabirov (Mekhanobr) on the automatic maintenance of constant hydrocyclone sands-density; by I.I. Blekhman (Mekhanobr) on the selection of the main operating parameters of vibration machines; by I.M. Abramovich (deceased) and R.V. Yevsiovich (Mekhanobr) on the development of a new industrial model of a three-level

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The Fourth Scientific-technical Session of the Mekhanobr Institute

concentrating table with 20 m^2 of total deck area; by G.A. Finkel'shteyn (Mekhanobr) on increasing the wear-resistance of beneficiation equipment particularly by rubberising; by G.A. Sedova (Giprotsvetmet) on the uncertainty of the need to automate beneficiation works; by A.M. Pogosov (VNIITsvetmet) on new equations for calculating the grindability of ores and productivity of ball mills; by A.K. Kuzovlev (Sredne-Aziatskiy institut geologii i mineral'nogo syr'ya - Central Asian Geological and Mineral Raw Materials Institute) on tests of a new type of turbo-cyclone; by V.I. Lutsenko (Gorno-metallurgicheskiy institut Armyanskogo sovnarkhoza - Mining-metallurgical Institute of the Armenian Economic Council) on measures to improve a type "Mekhanobr-6" flotation machine at the Kadzharan Works; by V.R. Kubachek (UZTM) on modernisation of crushing and grinding equipment; by S.I. Gorlovskiy on the work of the Mekhanobr Institute on collectors and flotation modifiers; by I.N. Maslenitskiy and V.V. Dolivo-Dobrovol'skiy (Mekhanobr) on the rendering harmless of waste water from beneficiation plants; by I.S. Shitov (Mine Management of the Magnitogorskiy metallurgicheskiy kombinat - Magnitogorsk

The Fourth Scientific-technical Session of the Mekhanobr Institute

Metallurgical Combine) on the slowness of Mekhanobr in certain fields; by A.A. Kalmykov (Noril'sk) on the incomplete utilisation of Noril'sk ores and changes in the flowsheet at the Noril'sk Beneficiation Works; by V.I. Saprykin (El'brus Mine) on the need for Mekhanobr to participate in the work on the utilisation of Suriysk deposit ores and accelerate their work in other fields; by B.M. Berdnikov (Tekeliyskaya obogatitel'naya fabrika - Tekeli Beneficiation Works) on the shortcomings of the Mekhanobr designs for the works; by V.A. Binkevich (Dnepropetrovskiy sovnarkhoz - Dnepropetrovsk Economic Council) on difficulties in the region in ore beneficiation; by O.S. Bogdanov, A.K. Podnek and V.Ya. Khaynman (Mekhanobr) on the kinetics of the action of flotation reagents; by V.Ya. Khaynman (Mekhanobr) on an investigation of the mechanism of the action of cyanides and complex cyanide compounds of ferri- and ferrocyanides; by S.D. Sukhovol'skaya (Mekhanobr) on factors producing depression of minerals; by N.Ya. Yanis (Mekhanobr) on the investigation of various flotation modifiers for non-sulphide minerals with the aid of radioactive isotopes; by I.N. Shorsher

The Fourth Scientific-technical Session of the Mekhanobr Institute SOV/136-58-10-23/27

(Mekhanobr) on the flotational separation of collective molybdenite-containing ores; Ye. I. Vishnevskiy and S.L. Gekhtman (Mekhanobr) on the beneficiation of cassiterite-containing ores; by N.K. Nikol'skiy, I.P. Kell[illegible], Yu.O. Tennison and Yu.N. Chepelkin (Mekhanobr) on the determination of the residual sulphur-ion concentration in the pulp with the aid of a silver-sulphide electrode; by A.S. Konev and K.G. Bakinov on the technology of separating lead-copper concentrate by depressing galenite with iron sulphate and sulphite and flotation of the copper minerals; by G.S. Strel'tsyn on the special features of flotation of perovskite ores at the Afrikanda Beneficiation Works; by I.N. Maslenitskiy and P.M. Perlov on the present state of the autoclave-soda process of treating tungsten-ore beneficiation products in the USSR; by V.I. Konstantinov (Mekhanobr) on layout at some of the largest Soviet beneficiation works; by M.S. Tevonyan (Kavkazskiy institut mineral'nogo syr'ya) on the successful experiments on the separation of a lead-copper concentrate with potassium permanganate; by V.A. Lisichenko (Kavkaz Institute of Raw Materials) on a study of the flotational reaction between

Card 4/6

The Fourth Scientific-technical Session of the Mekhanobr Institute

a mineral particle and an air bubble; by Professor I.A. Kakovskiy (Uralmekhanobr) on the influence of the surface state on the electrical separation of low-conductivity minerals; by Professor V.I. Klassen (IGD AN SSSR) on the vacuum flotation of particles smaller than 10 μ; by F.I. Nagirnyak (Uralmekhanobr) on the complex utilisation of low-grade copper-zinc ores; V.P. Sokolov (Sredneaziatskiy NII geologii i mineral'nogo syr'ya - Central NII of Geology and Mineral Raw Materials) on the beneficiation of boron-containing ores; Docent P.P. Titov on the use of radiant energy to improve the flotability of minerals; Professor K.A. Razumov (Leningradskiy gornyy institut - Leningrad Mining Institute); B.G. Krangachev (Armgiprotsvetmet) on some shortcomings of Mekhanobr; Ye.N. Grivezirskaya (Balkhash Copper Works) on Mekhanobr recommendations for that works; M.Z. Valyayeva (VNIITsvetmet) on the work of that organisation in Altay Beneficiation Works; by Professor S.I. Mitrofanov (Gintsvetmet) on sorption and the depressing action of reagents; V.A. Rundkvist (Mekhanobr) on the Mekhanobr designs for the Tekeli Works;

SOV/136-58-10-23/27

The Fourth Scientific-technical Session of the Mekhanobr Institute

Professor M.A. Eygeles (VIMS) on errors in N.A. Yanis' work; by I.P. Plaksin, Corresponding Member of the Ac.Sc.USSR, on some of the reports presented.
At the concluding plenary session, V.F. Fedorov (GNTK USSR) discussed the requirements in beneficiation for the future and the part to be played by Mekhanobr. The following participated in the discussions: A.A. Kalmykov (Noril'sk Combine), V.A. Olevskiy (Mekhanobr), I.S. Shitov (Magnitogorsk Metallurgical Combine).

Card 6/6

Card 1/1

POVAROV, A.I.

Formula for the calculation of the amount of overflow in hydrocyclones. Obog. rud 6 no.3:54 '61. (MIRA 14:11)
(Separators (Machines))

POVAROV, A.I.; IVANOVA, L.Ye.

Formulas for the calculation of hydrocyclones. Obog.rud 4
no.3:57 '59. (MIRA 14:8)
(Separators (Machines))

POVAROV, A.I.

Design of hydrocyclones based on industrial practice. Obog. rud 5 no.1:29-33 '60. (MIRA 14:8)
(Separators (Machines))

POVAROV, Anatoliy Ivanovich. Prinimala uchastiye IVANOVA, L.Ye.; VENKOVA, M.D., otv. red.; ROMANOVA, L.A., red.izd-va; PROZOROVSKAYA, V.L., tekhn. red.

[Hydrocyclones] Gidrotsiklony. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 265 p. (MIRA 15:1)
(Separators (Machines)

PEN'KOV, V.V.; POVAROV, A.P.

Devices for the mechanization of linear measurements. Izm.tekh. no.5:8-9 My '61. (MIRA 14:5)
(Measuring instruments)

POVAROV, A.V.; MARIPOV, T.M.

Experimental analysis of the degree of reliability of prospecting cross sections. Uch.zap.SAIGIMS no.5:107-113 '61. (MIRA 15:11)
(Prospecting) (Ore deposits)

LUK'YANOVA, Ye.N.; MARIPOV, T.M.; POVAROV, A.V.; RABKOV, K.N.; SHEKHTMAN, P.A.

Analysis of the prospecting methods of the Kansay lead-zinc deposit. Trudy SAIGIMSa no.3:93-153 '63. (MIRA 17:9)

SHEKHTMAN, P.A.; POVAROV, A.V.; MARIPOV, T.M.

Morphological characteristics of ore bodies in the Kansay lead-zinc deposit and methods of prospecting for them. Geol.rud. mestorozh. no.4:113-122 Jl-Ag '62. (MIRA 15:8)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.
(Kansay region (Tajikistan)--Lead ores)
(Kansay region (Tajikistan)--Zinc ores)

POVAROV, G., inzh.

Effectiveness of reserve storage of coal at the end of the navigation season in the port of Kuybyshev. Rech. transp. 24 no.7:18-19 '65. (MIRA 18:8)

KOPYLOV, V.T.; POVAROV, G.D.

Two-cam self-centering readjusting chuck. Mashinostroitel' no.12:20 D '61. (MIRA 14:12)
(Chucks)

POVAROV, G.M.

Structural design of symmetrical contact circuits. Avtomatyka no.4:48-53 '56. (MLRA 10:2)

1. Institut avtomatiki i telemekhaniki AN URSR.
(Electric circuits)

POVAROV, G. M.

SOV/102-58-3-7/10

AUTHORS: ~~Povarov, G.M.~~ (Povarov, G.M., and Roginskyy, V.N. (Roginskiy, V.N.)

TITLE: A Graphical Method of Synthesizing Multiterminal Networks (Grafichnyy metod syntezu kontaktnykh bahatopolyusnykiv).

PERIODICAL: Avtomatika (Kyiv), 1958, Nr.3, pp.84-91 (USSR)

ABSTRACT: A network with 1 input and k outputs is considered; the author's previous work on network synthesis, which used algebraic methods, is here extended to the use of graphical methods. The method is illustrated by Fig.1, where the k outputs are set out as points arranged along a vertical line. The system does not have to be split up into two-terminal ones for this purpose; the method can be applied to symmetrical and to quasi-symmetrical contact systems. The 'cascades' method (expounded in more detail in Avtomatika i Telemekhanika (Refs.6,8) by the same authors), in which systems incorporating resistors and relay coils in the circuits can be considered, at least in a general way, is re-expounded. The method to be adopted when there are p inputs is considered in relation to Fig.3; a hypothetical set of m relays operating from

Card 1/2

A Graphical Method of Synthesizing Multiterminal Networks. SOV/102-58-6-7/10

one input, where $2^m \geq p$, are considered in one block, and the rest in a second. The second unit thus has p inputs; the two together are treated in the same way. The methods are illustrated for a system with 3 inputs and 3 outputs (Fig.4). The method is always simple to operate, though it does not always give the best result. The usual methods of eliminating surplus contacts are not all applicable, but the advantage lies in the fact that all operations can be mechanized, i.e. can be done by a suitable computer. There are 4 figures and 12 references, of which 10 are Soviet, 1 English and 1 Czech.

Card 2/2

ASSOCIATION: Laboratoriya po rozrobtsi naukovykh problem providnoho zv'yazku AN SRSR (Laboratory for Solving Scientific Problems of Communication by Wire, Academy of Sciences, Ukr.SSR).

SUBMITTED: July 13, 1957

POVAROV, G.M.

PHASE I BOOK EXPLOITATION SOV/5038

Akademiya nauk SSSR

Primenenlye logiki v nauke i tekhnike (Application of Logic in Science and Technology) (Moscow) Izd-vo AN SSSR [1960] 357 p. Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: Resp. Ed.: I. V. Tavrozhi, E. Ya. Kol'man, G. M. Povarov and S. A. Yanovskaya; Ed. of Publishing House: R. Yu. Rozenberg; Tech. Ed.: S. P. Mirkovich.

PURPOSE: This book is intended for scientists interested in mathematical and symbolic logic.

COVERAGE: The book is a collection of 16 articles in which the authors discuss problems of mathematical logic and its application to computers, linguistics, sociology, methodology and various fields of technology. No personalities are mentioned. References follow all but one article.

AVAILABLE: Library of Congress

AC/dwm/ec 10
5-12-61

Card 4/4

POVAROV, G. N.

G. N. POVAROV, "On the theory of finite information apparatus (FIA)." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

The development of the technique to process information is noted and the problem of the appearance and mathematical description of the common structure and common laws of the process of treating information is discussed. The content of the general theory of discrete information apparatus which must include both finite information apparatus (FIA) and idealized infinite discrete information apparatus such as the Turing machine, say, is considered from this viewpoint. An attempt is made to formulate certain basic concepts of the theory of the FIA, mathematically.

A mathematical definition of FIA, and a preliminary classification are given by which the FIA are divided into combinational and evolutional FIA. Any FIA with a fixed input behaves autonomously. The theory of absolutely rigid Markov chains is used to record and analyze the operation of autonomous FIA. The concept of simulating one FIA by another FIA is introduced. The identification of the input signal of one FIA with the output signal of another FIA is called the fastening of these FIA, the set of FIA fastened in any manner is called a finite information chain (FIC) and an FIA in an FIC is a finite informational element (FIE).

Questions of the synthesis of FIC or FIE are discussed. The synthesis of the FIA as a whole is separated into the simulation of the FIA to be synthesized and the representation of the model as an FIC of given FIE.

POVAROV, G.N.

Theory of numeroids in automation algebra. Probl.pered.inform. no.11:23-33 '62. (MIRA 16:1)
(Automatic control) (Algebra, Abstract)

POVAROV, G. N.

"An Investigation of Contact Arrangements With the Minimum Number of Contacts." Cand Tech Sci, Inst of Automatics and Tele-mechanics, Acad Sci USSR, 30 Dec 54. (VM, 22 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

POVAROV, G.N.

Mechanical wear factors in the matrix analysis of relay and contact systems. Avtom. i telem. 15 no.4:332-335 Jl-Ag '54. (MLRA 7:11)
(Electric relays) (Mathematical physics)

USSR/Mathematics - Bibliography FD-1402

Card 1/1 : Pub. 10 - 11/12

Author : Povarov, G. N. (reviewer)

Title : Review of the book 'Sintez elektronnykh vychislitel'nykh i upravlyayushchikh skhem', Russian-language version of "The Annals of the Computation Laboratory of Harvard University," Volume XXVII (1951)

Periodical : Avtom. i telem., 15, No 6, 567-569, Nov-Dec 1954

Abstract : The book under review is a Russian-language translation, under the editorship of V. I. Shestakov, of the American monograph published 1951 as Volume XXVII of the nonperiodical publication known as "The Annals of the Computation Laboratory of Harvard University;" this Russian-language version was issued in 1954 by the Foreign Press. The reviewer states that the book may be useful to USSR engineers and also USSR mathematicians who are interested in the mathematical problems of synthesizing complex automatic devices. He considers the strong point of the book to be the abundance and diversity of methods of synthesis, which are written in a simple and understandable style of exposition; the deficiency of the book is its insufficiency of theoretical depth of exposition.

Institution :

Submitted :

POVAROV, G.N.

Povarov, G. N. On functional separability of Boolean functions. Doklady Akad. Nauk SSSR (N.S.) 94, 801–803 (1954). (Russian)

A method is given for determining whether or not a Boolean function is functionally separable in the sense of Shannon [Bell System Tech. J. 28, 59–98 (1949); these Rev., 10, 671]. This theorem is applied to symmetric functions to show that the only symmetric functions which are functionally separable are linear Boolean sums or linear sums modulo two. *C. Saltzer* (Cleveland, Ohio).

Algebra

Mathematics Inst. im. Steklov

POVARKOV, G. N.

1 - F/W

Povarov, G. N. On the synthesis of contact multipoles. Izv. Akad. Nauk SSSR (N.S.) 94 (1954), 1073–1076; correction 95 (1954), 1045. (Russian)

A (p, q)-pole contact network has p inputs and q outputs. If the outputs of a (p, q)-pole are connected to the inputs of an (r, s)-pole, the resulting network is a (p, s)-pole. The methods of the paper are based on a generalization of Shannon's theorem for $(1, q)$-pole networks [Bell System Tech. J. 28 (1949), 59–98; MR 10, 671] and give the Boolean admittances of the composite (p, s)-pole network in terms of the admittances of the constituent networks by a rule like that of matrix multiplication. Synthesis procedures based on this theorem are given and corresponding bounds for the number of contacts required are computed. *C. Salzer.*

Math. Inst. im. V. A. Steklov, AS USSR

ROGINSKIY, Vadim Nikolayevich; KHARKEVICH, Anatoliy Dem'hanovich; POVAROV, G.N., redaktor; MAKAROVA, A.Ya., redaktor; SOKOLOVA, R. Y a, tekhnicheskiy redaktor.

[Telephone relay systems] Releinye skhemy v telefonii. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1955. 165 p. (MLRA 8:8)
(Telephone) (Electric relay)

POVAROV, G.M.

New method of synthesis for symmetrical contact circuits. Dop. AN URSR no.2:115-117 '55. (MLRA 8:11)

1. Matematichniy institut imeni V.A.Steklova Akademii nauk SRSR. Predstaviv diysniy chlen Akademii nauk URSR O.Yu.Ishlins'kiy
(Electric circuits)

POVAROV, G.N.

621.372.4 : 621.3.011

1876. A METHOD OF ANALYSING SYMMETRICAL CONTACT CIRCUITS. G.N.Povarov. Avtomat. i Telemekh., Vol. 16, No. 4, 364-5 (1955). In Russian.

A method of analysing symmetrical contact circuits, based on results of group theory, is briefly outlined with reference to a symmetrical dipole. The characteristics of the Boolean function representing the conductivity conditions of symmetrical dipoles (or multipoles) are discussed and the extension of the method to symmetrical multipoles is indicated.

Electrical Research Association

POVAROV G.N.

USSR/ Engineering - Relay-contact circuits

Card 1/1 Pub. 22 - 18/49

Authors : Povarov, G. N.

Title : A mathematical theory of the synthesis of contact (1,k) pole pieces

Periodical : Dok. AN SSSR 100/5, 909-912, Feb 11, 1955

Abstract : A mathematical theory of the synthesis of relay-contact (1,k) pole pieces is presented. The method of cascades is used to prove ten basic theorems. A practical application of the theory leads to the 11-th theorem which states that the number of contacts for the (1,4) pole pieces should be ≤ 28. The symbol (1,k) means that the circuit has one input and k output contacts. (An analogous theory for depoles was developed by C. E. Shannon). Sixteen references: 9 USSR, 2 British, 2 USA, 1 French, 1 Canadian and 1 Unknown (1936-1954). Diagrams.

Institution : Academy of Sciences of the USSR, V. A. Steklov Mathematical Institute

Presented by: Academician V. S. Kulebakin, June 5, 1954

POVIAROV, G.N.

USSR/Automatics and telemechanics FD-2667

Card 1/1 Pub. 10-14/15

Author : Povarov, G. N. (compiler)

Title : List of Soviet literature on the theory of relay-contact circuits for 1950-1954

Periodical : Avtom. i telem. 16, Jul-Aug 1955, 411-412

Abstract : A list of 39 works (8 in 1950, 2 in 1951, 7 in 1952, 7 in 1953, and 15 in 1954) on relay-contact circuit theory appearing in Soviet periodicals and monographs (USSR, Poland, Germany), including dissertations; e.g. A. G. Lunts, "Theory of multipole networks," dissertation, Leningrad, 1954.

Institution :

Submitted :

POVAROV, G.N.

FD-2668

USSR/Automatics and telemechanics

Card 1/2 Pub. 10-15/15

Author : Povarov, G. N. (compiler)

Title : List of foreign and translated literature in the theory of relay-contact circuits for 1950-1954

Periodical : Avtom. i telem. 16, Jul-Aug 1955, 412-420

Abstract : A list of 120 works, articles and monographs, by Western authors (US, GB, France, German, etc.) on the theory of relay and switch contacts (7 in 1950, 15 in 1951, 40 in 1952, 38 in 1953, and 20 in 1954). The titles of the works in the list are translated into Russian; e.g. relay and switch contacts = releyno-kontaktnyye skhemy, coincidence-type adders = summatory kombinatsionnogo tipa, telephone exchange = ATS, N-terminal switching circuits = N-polyusnyye pereklyuchatel'nyye skhemy, design of circuits = sintez skhem, miniature rectifier circuits = miniatyurnyye ventil'nyye skhemy, design of calculators = proyektirovaniye vychislitel'nykh ustroystv, two-valued feedback circuits = dvuznachnyye skhemy s obratnoy svyaz'yu, decision elements = reshayushchiye elementy, computer = vychislitel'naya mashina, Boolean algebras = Bulevy algebry, truth functions = funktsii istinnosti, digital computers = tsifrovyye vychislitel'nyy ustroystva, magnetic binaries=

Card 2/2

FD-2668

Abstract : magnitnyye dvoichnyye razryady, decomposition of switching functions = razlozheniye pereklyuchatel'nykh funktsiy, circuit designer = proyektirovshchik skhem, coincidence detectors = vyyaviteli sovpadeniy, sequence charts = vremennyye diagrammy, control circuits = upravlyayushchiye skhemy, combinatorial logic circuits = kombinirovannyye logicheskiye skhemy, completeness of decision element sets = polnota mnozhestv reshyaushchikh elementov, magnetic core switches = pereklyuchateli na magnitnykh serdechnikakh, information-handling system = sistema obrabotki informatsii, switchable networks = pereklyuchayemyye skhemy, scale-of-two circuit = skhema dvoichnogo scheta, adaptation of relay circuits = prisposobleniye releynykh skhem, lattice-theoretic properties = teoretiko-strukturnyye svoystva, frontal switching functions = zamykayushchiye pereklyuchatel'nyye funktsii, sequential switching circuits = mnogotaktnyye pereklyuchatel'nyye skhemy, error detection = vyyavleniye oshibok, timing charts = vremennyye diagrammy, etc.

POVAROV, G.N.

1-F\W

Povarov, G. N. On the study of symmetric Boolean functions from the point of view of the theory of relay-contact circuits. Dokl. Akad. Nauk SSSR (N.S.) 104 (1955), 183–185. (Russian)

A simple geometric criterion based on a representation of Boolean functions is derived for determining when a Boolean function is symmetric, and applications of this theorem are given, including the case of circuits with independent contacts. *C. Salzer* (Syracuse, N.Y.)

Povarov, G. N.

621.318.5 1351

Mathematical Theory of the Synthesis of Contact (1,k)-Poles. G. N. Povarov. *C. R. Acad. Sci. U.R.S.S.*, 1955, Vol 111, No. 1, pp. 102–104. In Russian.

POVAROV, G. N.

"The Status of the Question on the Minimal Number of Structural Elements in Relay-Contact Systems" (Sostoyaniye voprosa o minimal'nom chisle strukturnykh elementov v releyno-kontaktnykh skhemakh) from the book Telemechanization in National Economy, pp. 134-138, Iz. AN SSSR, Moscow, 1956

(Given at meeting held in Moscow, 29 Nov to 4 Dec 54 by Inst. of Automatics and Telemechanics AS USSR)

POVAROV G.N.

SUBJECT USSR/MATHEMATICS/Algebra CARD 1/1 PG - 1000

AUTHOR POVAROV G.N.

TITLE On the matrix theoretical analysis of the connections in partly oriented graphs.

PERIODICAL Uspechi mat.Nauk 11, 5, 195-202 (1956)
reviewed 7/1957

The quasi-minor of a_{kl} in the $p \times p$ matrix (a_{ij}) is defined to be $a_{kl} + \sum a_{ki_1} a_{i_1 i_2} \cdots a_{i_r l}$, the summation being taken over all choices of r ($\leq p-2$) different integers from the set $1,2,\ldots,p$ with k,l omitted. An expansion is given in terms of quasi-minors of the matrix formed by omitting row l and column k from (a_{ij}). If a_{kl} is the number of immediate paths in a partly oriented graph from vertex k to vertex l, then the total number of paths from k to l is the quasi-minor of a_{kl}. The author obtains other results in graphs and linear networks in terms of quasi-minors and also gives a criterion for the irreducibility of a real matrix with non-negative elements.

POVAROV, G.N.

Graphic synthesis of symmetric contact circuits. Priborostroenie no.12:7-9 D '56. (MIRA 10:1)
(Electric circuits--Graphic methods)

POVAROV, G.N.

Review on R. Higonnet and R. Grea's book "Logical analysis of electrical circuits and binary systems." Avtom. i. telem. 17 no.6:581-583 Je '56. (MLRA 9:10)

(Electric circuits) (Logic, Symbolic and mathematical)

POVAROV G.N.

CARD 1 / 2 PA - 1745

SUBJECT USSR / PHYSICS
AUTHOR POVAROV,G.N.
TITLE On the Mathematical Theory of the Synthesis of Contact-(1,k)-Poles
PERIODICAL Dokl.Akad.Nauk, 111, faso.1, 102-104 (1956)
Issued: 1 / 1957

The theorems given here make it possible to estimate the number of contact-(1,k)-poles in the case of high values of k. The present work makes use of expressions and notions found in the work by G.N.POVAROV, Dokl.Akad.Nauk, 100, No 5, 909 (1955), but the nodes are here treated as being identical with the poles to which they are connected. The following theorems are put forward and explained:

Theorem 1. Let a contact-(1,k)-pole be assumed as given. If the output, to which not more than two branches are connected, is not to belong to a not real function, to a π- or to a σ-function, it is necessary that two inverse contacts of one and the same reception element be connected to this output. Furthermore, these contacts must not be connected to other contacts at one and the same time which are incident to those two branches which represent the inverse contacts of one and the same receiving element.

For every (1,k)-pole a chain K of the classes of outputs, and a chain Λ of the classes of the branches is constructed in a recoursive manner. Because of the finite number of outputs the chain of classes will eventually break off: all chains are, in the end, empty. The outputs belonging to the classes of the chain K are here referred to as "classified".

POVAROV, G. N., Cand. Tech. Sci., Senior Research Associate, Moscow, USSR

"A Mathematical Theory for the Synthesis of Contact Networks with One Input and k Outputs," a paper submitted at the International Symposium of the Theory of Switching, Harvard University, 2-5 Apr 57.

POYARKOV, G.N.

621.316.5.055

4474. A METHOD OF SYNTHESIS OF COMPUTING AND CONTROLLING CONTACT CIRCUITS - G.N. Poyarov. Avtomat. i Telemekh., Vol. 16, No. 2, 145-52 (1955). In Russian.

Gavrilov's and Shannon's method for cascade-type networks is generalized for bridge-type and multi-output contact sytems. This new cascade-method represents a concise step-by-step algorithm resulting in considerable time saving in the design and economy of circuitry. European switching algebra is used. Six examples are presented, referring to combinatory binary addition and subtraction, decimal inversion, binary-number comparison, code translation for subscriber's pulses and symmetrical lattice.

Electrical Research Association

POVAROV, G.N.

POVAROV, G.N.

List of Soviet and foreign literature on the theory of relay circuits for 1956. Avtom i telem. 18 no.12:1151-1152 D '57. (MIRA 10:12)
(Bibliography--Electric relays)

Povarov, G.N.

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki

Avtomatika i telemekhanika; sbornik (Automation and Telemechanics; Collection of Articles) Moscow, 1958. 144 p. 5,000 copies printed

Resp. Ed.: Ya.Z. Tsypkin; Ed. of Publishing House: V.A. Kotov; Tech. Ed: I.N. Guseva

PURPOSE: This collection of articles is intended for specialists in automation and remote control.

COVERAGE: The book contains fifteen papers presented at the Fourth and Fifth scientific and technical conferences, held in 1955 and 1956, by junior members of the staff of the Institut avtomatiki i telemekhaniki (Institute of Automation and Telemechanics), Academy of Sciences, USSR. The papers are based on the individual research of their authors. The collection consists of five parts: Automatic Control, Components of Automatic and Remote Control Systems, Automated Electric Drive, Automatic Checking, and Remote Control.

Abdullayev, D.A. Some Problems of Building Remote Control Systems With Dispersed Points of Operation 109

The author investigates methods of discriminative selection of objects of remote control on the basis of efficient outlay of equipment so as to efficiently plan remote control systems with dispersed points of operation. The task is reduced to the design of remote control systems with the smallest outlay of relays in dispatching points. With a small number of objects in operational points, the author finds most efficient the principle of a "distributive switch", which was developed at the Remote Control Laboratory of IAT. There are 7 references: 6 Soviet and 1 English. No personalities are mentioned.

Kashirin, V.A. Optimum Time of Quantizing a Signal in the Presence of Noise 118

The author derives a formula for determining the optimum time of quantizing for the spectral function of a given signal, a given method of transmission, and a certain intensity of noise in the communications channel, which will result in the smallest total error. The author uses the Kotel'nikov theorem for his discussion. There are 3 Soviet references. No personalities are mentioned.

Ostianu, V.M. Cascade Method of Synthesizing Contact Circuits Equipped With Step Switches 122

The author discussed a method of synthesizing (1,k)-terminal networks with step switches, which is a generalization of the cascade method proposed by G.N. Povarov for synthesizing relay-contact(1,k)-terminal networks. Following G.N. Povarov, the author terms "cascade" connections those connections in which each output of the first multiterminal network is connected to one and only one input of the second multiterminal network. He presents an example of such synthesis. There are 5 references: 4 Soviet and 1 English.

Povarov, G.N. Cascade Method of Synthesizing Symmetrical Contact Circuits 127

The author presents a graphical variant of the cascade method, specially adapted for synthesizing symmetrical and related (1,k)-terminal networks. He considers the graphical method to be a much simpler one for engineering purposes than the analytical method, as applied to (1,k) terminal networks. He suggests its use for the synthesis of quasi-symmetrical contact circuits and contact circuits having one input and one or several outputs. There are 9 references: 7 Soviet, 1 Czech and 1 English.

Silayev, V.M. Remote Control System for Dispersed Objects 133

The author attempts to find a solution for a remote control system which would be simple in structure, use a small number of wires, with the smallest possible amount of relay equipment at each control point, a sufficiently large radius of action, and be flexible and reliable in operation. He discusses several methods used and concludes that application of the principle of "distributive selection" with a dispersed switch gives satisfactory results, as demonstrated in laboratory tests over a four-month period. There are 3 Soviet references. No personalities are mentioned.

POVAROV-G.N.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow, vol. 4; Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchanko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Section on Computational Mathematics

Card 17/ 34

POVAROV, G.N.

Theory of the structure of communications networks. Probl. pered. inform. no.1:126-140 '59. (MIRA 13:3)
(Telecommunication)

POVAROV, G.N.

Duschek classes, numeroids, and frames. Probl. peredv. inform. no.12:16-31 '63.

45291

S/562/62/000/011/002/008
E140/E135

AUTHOR: Povarov, G.N.

TITLE: The theory of numeroids (on the algebra of automata)

SOURCE: Akademiya nauk SSSR. Institut problem peredachi informatsii. Problemy peredachi informatsii. no.11. 1962. Voprosy teorii pererabotki i raspredeleniya informatsii. 23-33.

TEXT: The author has developed his theory of numeroids for the purpose of permitting a unified treatment of different theories of control and communications. Similarly to the concepts of ring and lattice, the idea of numeroid characterises a certain class of algebras with binary composition and connected with the properties of ordinary numbers, differing from the former two concepts in the laws of composition. A numeroid can be defined as follows: An ensemble A with addition $(x + y)$ and multiplication $(x.y)$ defined on it is a numeroid if a) the two operations are single-valued, applicable to any arbitrary elements of A and giving as the result only elements of A; b) if these two operations are associative and commutative; c) there is at least one identity for

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16.8050

37013
S/044/62/000/003/070/092
C111/C333

AUTHOR: Povarov, G. N.

TITLE: Absolutely rigid Markov chains in autonomous relay-contact circuits and analogous determined systems

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 51, abstract 3V267. ("Probl. peredachi inform.". No. 4. M., AN SSSR, 1959, 85-96)

TEXT: The change of states in an autonomous relay-contact (r.-c.) circuit forms an absolutely rigid Markov chain, i. e. a Markov chain in which the transition probabilities are 0 and 1; this renders possible to apply the theory of Markov chains to the investigation and classification of the r.-c. circuits. To each r.-c. circuit there corresponds a single absolutely rigid Markov chain. The matrix of the transition probabilities gives after reduction to the normal form - by simultaneous permutation of rows and columns - an exact and simple representation of all temporary processes in the autonomous circuit. The results are not only applicable to r.-c. circuits, but also to arbitrary determined devices of contactless elements.
[Abstracter's note: Complete translation.]
Card 1/1

3701
S/044/62/000/003/071/092
C111/C333

16.6800
AUTHOR: Povarov, G. N.

TITLE: On the investigation of the contact circuits of ordered type

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 51, abstract 3V268. ("Probl. peredachi inform.". No. 4, M., AN SSSR, 1959, 133-139)

TEXT: One of the classes of circuits of ordered type is formed by circuits which realize the singular Boolean functions. The Boolean function $f(x_1, x_2, \ldots, x_n)$ is called singular relative to x_i, if it holds

$$f = \tilde{x}_i f' + f''$$

where f' and f" do not depend on x_i. The number Ω_n of the singular Boolean functions of n variables satisfies the relation $\Omega_n \leq n3^{2^{n-1}}$. A Boolean function which is singular relative to all its variables is called completely singular. The class of the completely singular Boolean functions is identical with the class of those Boolean functions which are representable by expressions in which each variable occurs either

Card 1/2

POVAROV, G.N.

Geometry of Boolean functions and self-correcting codes from the viewpoint of the Erlangen program. Probl.pered.inform. no.10: 35-41 '61. (MIRA 14:8)
(Information theory) (Boolean functions)

28583
S/562/61/000/010/003/007
E140/E435

6.9500

AUTHOR: Povarov, G.N.

TITLE: The geometry of Boolean functions and self-correcting codes from the viewpoint of the Erlangen programme

SOURCE: Akademiya nauk SSSR. Laboratoriya sistem peredachi informatsii. Problemy peredachi informatsii, no.10, 1961, 35-41

TEXT: One of the important leading principles of geometry is the view expressed by the German mathematician F. Klein at the University of Erlangen in 1872 that every geometric system is based on a certain group of transformations preserving invariant the properties of geometric figures in the system. The purpose of the present article is to extend the Erlangen programme, broadly interpreted, to the geometry of Boolean functions and the closely related geometry of self-correcting binary codes. Each term in the canonical expansion of a Boolean function may be considered as a point (atom) of the Boolean algebra formed by Boolean functions of n variables. By virtue of the uniqueness of the canonical expansion, Boolean functions may be considered simply as various

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28583
S/562/61/000/010/003/007
E140/E435

The geometry of Boolean ...

subsets of the set of 2^n points. The argument is summed up in theorem 1: The set of all isometric transformations of an n-dimensional Boolean space is a Jevons group. Here the term isometric refers to transformations leaving the logical (Hamming) distance invariant, and the Jevons group consists of all transformations equivalent to a permutation of order of the variables and complementation of a selected set of variables. The author has previously used the term unitype transformation. He finds the term Jevons transformation less clumsy. Transformations leaving invariant the distance properties of Boolean functions can be considered as operations changing the position of a Boolean figure in a Boolean space. There are 19 references: 7 Soviet and 12 non-Soviet. The four references to English language publications read as follows:
Ref.3: R.W.Hamming. Error-detecting and error-correcting codes, BSTJ, v.26, 147, 1950. Russian translation edited by A.M.Petrovskiy, M., IL, 1956;
Ref.11: C.E.Shannon, Trans. AIEE, 1938, v.57, 713-723;
Ref.15: C.E.Shannon. BSTJ, 1949, v.28, no.1, 59-98;

Card 2/3

S/044/6[illegible]/000/005/001/035
C111/C444

AUTHOR: Povarov, G. N.

TITLE: Logical aspects concerning events and judgements in connection with logical problems of the technics

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1961, 8, abstract 5A73. (In sb.: "Primeneniye logiki v nauke i tekhnike" M., ANSSSR, 1960, 413 - 420)

TEXT: In connection with the well-known possibility to interprete the propositional calculus as an algebra of judgements and an algebra of events, the author sees certain principal advantages in each of these possibilities for various applications of the propositional calculus.
Note of the reviewer: Without any sufficient cause the event-interpretation is called a "metatheory of events" by the author.

(Abstracter's note: Complete translation.)

Card 1/1

POVAROV, G.N.

Brief description of the theory of cumulative [illegible]. Probl.pered.inform. no.6:46-56 '60. (MIRA 13:11)

(Informative theory)

POVAROV, G.N.

Use of the cumulative network theory for the qualitative analysis of electric circuits of finite conductivity. Dokl. AN SSSR 136 no.2:308-310 '61. (MIRA 14:1)

1. Laboratoriya sistem peredachi informatsii Akademii nauk SSSR. Predstavleno akademikom V.S. Kulebakinym.
(Automatic control)

89605

S/020/61/136/002/008/034
B019/B056

9,3200 (also 1009, 1013, 1031, 1132)
16,6500

AUTHOR: Povarov, G. N.

TITLE: Qualitative Analysis of Electric Circuits With Finite Conductivities by Means of the Theory of Cumulative Nets

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 308-310

TEXT: A new matrix method for the qualitative estimation of circuits consisting of contacts and elements with finite conductivity is given. In this method the general theory of combination of cumulative nets developed by the author is applied which includes an illustration of the applicability of this theory in the control engineering. By assigning to the quantity $\{0, 1/2, 1\}$ the operations $x + y = \max(x,y)$ and $xy = \min(x,y)$, one obtains a distributive structure with zero and unity. This structure is part of the three-valued logic by J. Lukasiewicz (Refs. 12, 13), and may therefore be described as three-element algebra according to Lukasiewicz. If a system C consists of contacts and elements with finite conductivity, the resistance of a branch connecting the i-th element with the j-th, may be given with f_{ij}, and the total resistance of all systems of the circuit C between the

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89605

Qualitative Analysis of Electric Circuits With Finite Conductivities by Means of the Theory of Cumulative Nets

S/020/61/136/002/008/034
B019/B056

i-th and the j-th element with F_{ij}. If now the conception "infinite conductivity" is described by "conductivity equal to unity", and an "infinite conductivity" ($\neq 0$) with "conductivity equal to 1/2", a qualitative analysis of the circuit C leads to the calculation of the matrix $\|F_{ij}\|$ according to a given matrix $\|f_{ij}\|$ in the three-element algebra by Lukasiewicz. From the theory of cumulative nets, three matrix methods are then discussed for the analysis of circuits. The first consists in potentiating the matrix $\|f_{ij}\|$, the second in calculating the quasi-minors of the matrix $\|f_{ij}\|$, and the third consists in calculating the unsigned minors of the matrix $\|f_{ij}\|$. This kind of analysis holds also for circuits with contacts of multiposition switches, where instead of the Boolean functions, monadic predicates must be used. Finally, the use of the here suggested method for the analysis of the order of conductivity is dealt with. Instead of the three-valued algebra by Lukasiewicz, the n-algebra by Lukasiewicz must in this case be used. There are 20 references: 13 Soviet, 2 US,

Card 2/3

POVAROV, G. N.

PHASE I BOOK EXPLOITATION SOV/5083

Akademiya nauk SSSR

Primeneniye logiki v nauke i tekhnike (Application of Logic in Science and Technology) [Moscow] Izd-vo AN SSSR [1960] 357 p. Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: Resp. Ed.: I. V. Tavanets, E. Ya. Kol'man, G. N. Povarov and S. A. Yanovskaya; Ed. of Publishing House: R. Yu. Rozenberg; Tech. Ed.: S. T. Markovich.

PURPOSE: This book is intended for scientists interested in mathematical and symbolic logic.

COVERAGE: The book is a collection of 16 articles in which the authors discuss problems of mathematical logic and its application to computers, linguistics, zoology, methodology and various fields of technology. No personalities are mentioned. References follow all but one article.

AVAILABLE: Library of Congress

AC/dwm/mc 10
5-12-61

Card 1/4

S/026/60/000/010/010/013
A166/A026

AUTHOR: Povarov, G.N., Candidate of Technical Sciences (Moscow)

TITLE: A New Look at Cybernetics

PERIODICAL: Priroda, 1960, No. 10, pp. 78-80

TEXT: This is an appraisal of the book "The Elements of Cybernetics, Expounded Non-Mathematically", written by the Polish Professor Henrich Grenewski. The book gives a much clearer definition than hitherto of the basic concepts of cybernetics, regarding it as "a relatively isolated system". This basic definition is modified by 3 further definitions. (1) "Cybernetics is the general science of informable, informing and information systems". (2) "Cybernetics is the science which studies any relatively isolated system, but with particular reference to informable, informing and information systems". (3) "Cybernetics is the modelling of various complex relations with the help of theoretical and physical relatively isolated systems". The book is recommended for the specialist, the engineer or the educated reader. There are 2 references: 1 Soviet and 1 Polish.

Card 1/1

POVAROV, G.N.

Study of regulating type switching circuits. Probl. pered. inform. no.4:133-139 '59. (MIRA 13:7)
(Boolean functions) (Switching theory)

POVAROV, G.N.

Fully fixed Markov chains in independent contact-relay networks and analogous determined systems. Probl. pered. inform. no.4:85-96 '59. (MIRA 13:7)
(Telephone, Automatic) (Probabilities)

82857
S/112/60/000/008/006/012

16.6800
Translation from: Referativnyy zhurnal. Elektrotekhnika, 1960, No. 8, p. 286, # 4.7361

AUTHOR: Povarov, G.N.

TITLE: On the Logical Synthesis of Electronic Computing and Control Circuits

PERIODICAL: V sb.: Logicheskiye issledovaniya. Moscow, AS USSR, 1959, pp. 406-414

TEXT: An account is given of several methods of logical synthesis of electronic circuits, based on mathematical logic, which are analogous to the synthesis methods of contact circuits. A classification is given of electronic (n-, k-) terminal network switches in transmitting effects from inputs to outputs. The author studies the method of synthesis branches of (n, k)-terminal networks, and also the synthesis method of diverging (n, k)-terminal networks, which is more economical than the branching method (cascade method). As an example a diagram for the function $f(w, x, y, z) = w[x(y+z) + x(y \oplus z)] + w[x(y \oplus z) + x\,y\,z]$ is given and a (3,4)-terminal network is designed carrying out elementary

Card 1/2

...OVNIKOV, G. N.

А. В. Шереметьев

Разработка технических решений по переводу на телеобслуживание тяговых усилительных пунктов существующих кабельных магистралей

Г. Н. Поваров

Некоторые вопросы общей теории сетей управления и связи

И. И. Жалков

Механизация работ по строительству и эксплуатации линий связи и радиофикации на железобетонных опорах

12 июня

(с 10 до 16 часов)

Б. П. Терентьев,
К. Е. Волковинский

Электронный телеграфный аппарат

З. В. Мишкин,
В. Н. Кирсанов

Электронные датчики испытательных сигналов

Р. А. Кудрявцев

Анализ и выбор электрической схемы фототелеграфного аппарата с оптикомеханической разверткой изображения

12 июня

(с 18 до 22 часов)

Г. А. Емельянов

О законах распределения искажений телеграфных сигналов при [illegible] и стартстопной передаче с [illegible] тонального телеграфирования

А. С. Юганов

Повышение коэффициента использования канала связи при фототелеграфировании

В. Н. Кирсанов

Комбинированные системы телеграфного уплотнения

6. СЕКЦИЯ ТЕЛЕВИДЕНИЯ

Руководитель С. И. Катаев

9 июня

(с 10 до 16 часов)

В. Г. Калинин,
А. С. Ангелов

Телевизор на полупроводниковых приборах

Ю. И. Серебряков

Выходной каскад вертикальной развертки

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959